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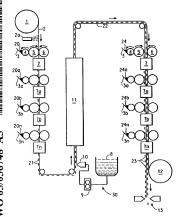
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[Continued on next page]

(54) Title: CONTINUOUS PRODUCTION OF CATALYST COATED MEMBRANES



(57) Abstract: A process for the production of catalyst coated membranes, especially catalyst coated membranes for use in fuel cells, that includes applying followed by drying of an electrocatalyst coating composition (21), a polymeric disopersion (22) and a second electrocatalyst coating (23) composition onto the surface of a temporary substrate (2), followed by separation of the emporary substrate.

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Declarations under Rule 4.17:

- as to applicant's entillement to apply for and be granted a potent (Bull 4-170) for the following designation (EA. AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, BC, EE, ES, FL, GB, GD, GE, GH, GM, HR, HL, DI, L, M, SA, PE, KE, KG, KF, KR, KZ, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MM, MM, MM, MO, AK, MC, NG, CM, PP, PP, PP, FP, RO, RI, SD, SE, SG, SL, SK, SL, TJ, TM, TN, TR, TT, TZ, LM, UG, UC, VP, VI, ZA, ZM, ZM, RR/BPOptent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Envasion potent (AH, AZ, BY, KG, KZ, MD, MC, TJ, TM), European potent (AT, EB, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FG, RE, TE, UM, CM, PL, FT, SE, SK, TR), OMP) potent (BF, BC, CF, CG, CL, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD), TD).
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
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Relevant to claim No.

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 HO1M C25B

Category * Citation of document, with indication, where appropriate, of the relevant passages

9 August 1994 (1994-08-09) column 6, line 8 - line 32; figure 4 FR 2 805 927 A (COMMISSARIAT ENERGIE

DE 197 05 469 C (KERNFORSCHUNGSANLAGE

JUELICH) 22 October 1998 (1998-10-22) column 2, line 21 - line 38; claim 1 US 5 336 570 A (DODGE JR CLEVELAND E)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

ATOMIQUE) 7 September 2001 (20 claims 1,2,5,8	
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	X Patent family members are listed in annex.
end defining the general state of the art which is not thered to be of particular relevance in the property of the property of the property of the property of the property of the property claim(s) or street which may thow doubt on priority claim(s) or street or statistic in the publication and or another that the property of the property of the property of ent referring to an oral disclosure, use, exhibition or near property of the property of the property of ent published prior to the international filing date but and the property disclosured.	17 laker document published after the international filing date or printly date and not in conditival with the application but closed to undealast in the principle or through underlying the close to undealast in the principle or through underlying the close of the condition of
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	claims 1,2,5,8 mer documents are listed in the continuation of box C. teopries of cloed documents: and defining the general state of the ant which is not becoment but published on or after the international and the state of

INTERNATIONAL SEARCH REPORT

Inte mai Application No PCT/US 02/34103

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Category * | Citation of document, with indication, where appropriate, of the relevant passages KANFKO FT AL: "Manufacture of 1 А electrode/ion exchanger and electrode/ion exchanger/electrode laminates" XP002210748 -& PATENT ABSTRACTS OF JAPAN vol. 1995, no. 10, 30 November 1995 (1995-11-30) & JP 07 176317 A (SANYO ELECTRIC CO LTD), 14 July 1995 (1995-07-14) abstract US 6 074 692 A (HULETT JAY S) 13 June 2000 (2000-06-13) WO 97 23916 A (FRANK GEORG : BOENSEL HARALD (DE); CLAUSS JOACHIM (DE); DECKERS GRE) 3 July 1997 (1997-07-03) page 20, last paragraph -page 21, paragraph 2 7,8 WO OO 72391 A (MICROCOATING TECHNOLOGIES INC ; HUNT ANDREW T (US)) 30 November 2000 (2000-11-30) page 9, last paragraph -page 10, paragraph US 5 945 231 A (HALPERT GERALD ET AL) 31 August 1999 (1999-08-31) 1 P,A WO 02 058178 A (HOSAKA MASATO :KOSAKO SHINYA (JP); UCHIDA MAKOTO (JP): MATSUSHITA) 25 July 2002 (2002-07-25) abstract; figure 4 -& EP 1 278 260 A (MATSUSHITA ELECTRIC INDUSTRIAL CO LTD) 22 January 2003 (2003-01-22) column 4, paragraph 22; claim 4; figure 4 column 11, line 44 -column 12, line 22 column 15, line 49 -column 16, line 5 column 8, line 4 - line 11 column 8, line 33 - line 54

INTERNATIONAL SEARCH REPORT

Intr mal Application No PCT/US 02/34103

					١,	017 03	02/ 54105	
	itent document I in search report		Publication date		Patent family member(s)		Publication date	
DE	19705469	С	22-10-1998	DE	19705469	C1	22-10-1998	
US	5336570	A	09-08-1994	WO US US	9405051 5458989 5509942	A	03-03-1994 17-10-1995 23-04-1996	
FR	2805927	A	07-09-2001	FR CA EP WO US	2805927 2400146 1259995 0165623 2003022054	A1 A1 A1	07-09-2001 07-09-2001 27-11-2002 07-09-2001 30-01-2003	
US	6074692	Α	13-06-2000	NON	:			
WO	9723916	A	03-07-1997	DE WO	19548422 9723916		11-09-1997 03-07-1997	
MO	0072391	• А	30-11-2000	US AU CA EP JP WO	6403245 5151300 2371428 1181727 2003500822 0072391	A A1 A2 T	11-06-2002 12-12-2000 30-11-2000 27-02-2002 07-01-2003 30-11-2000	
US	5945231	Α	31-08-1999	US US	2002058178 6391486		16-05-2002 21-05-2002	
WO	02058178	Α .	25-07-2002	JP JP JP EP WO	2002216789 2002246040 2002246041 1278260 02058178	A A Al	02-08-2002 30-08-2002 30-08-2002 22-01-2003 25-07-2002	